National Dialog On Sustainable Agricultural Intensification in Ethiopia and its role on the climate resilient green economy initiative in Ethiopia

July 23rd and 24th, 2012, ILRI Campus, Addis Ababa

The status of forestry development in Ethiopia: Challenges and Opportunities

Wubalem Tadesse
Ethiopian Institute of Agricultural Research
wubalem16@gmail.com

OUTLINE

1. Introduction
2. Opportunities for Forest Development In Ethiopia
3. Major Challenges and its Consequences
4. The Contribution of Forest Development to Poverty Reduction and the need for Integration of Agricultural Sectors in Ethiopia
5. Conclusions and Recommendations

1. INTRODUCTION

- Forests are vital for life on earth.
- They are not just the green cover we need to make the earth look beautiful.
- It is not possible to sum up the importance of forests in just a few words.
- Despite our dependence on forests, we are still allowing them to disappear.

1. Introduction…….

According to WBISPP (2004), may be the first national inventory that provided reasonably reliable statistics on the forest resources indicated/reported that Ethiopia owns a total of 59.7 million ha covered by woody vegetation among which:

- 3.56 % are high forest (about 4.07 million ha),
- 49 % woodland (29.24 million ha) and
- 44.2 % shrubland or bushland (26.4 million ha) and
- plantations cover estimated to 955,705 ha.

Extent of Ethiopia's High Forests

REGION	Total (ha)	%
Oromiya	**2,547,632**	**63%**
SNNPR	**775,393**	**19%**
Gambella	**535,948**	**13%**
Harari	216	0%
Amhara	92,744	2%
Tigray	9,332	0%
Beneshangul	68,495	2%
Afar	39,197	1%
Somali	4,257	0%
TOTAL	**4,073,213**	**3.56%**

1. Introduction…….


CEEPA
POLICY BRIEF
No 47, June 2010
Accounting for the value of the environment

Forestry Resource Accounting: The Experience of Ethiopia (Sisay Nune *et al*., 2010)

The value of its forest resources was worth 89 billion ETB in 1995 and 83 billion ETB in 2005.

When compared to Ethiopia's overall economy, the economic contribution of the forestry sector was <u>11.60 %</u> of the country's total **GDP** in 1995 and <u>9.0 %</u> in 2005.

Its economic contribution including watershed services was <u>27.5 %</u> in 1995 and <u>18.8 %</u> in 2005.

The percentage contribution of forests to the national economy climbs further still if the following services are taken into account: the value of **wild edible plants**, **spice resources**, and the contribution of **protected areas** to the national economy.

2. OPPORTUNITIES FOR FOREST DEVELOPMENT IN ETHIOPIA

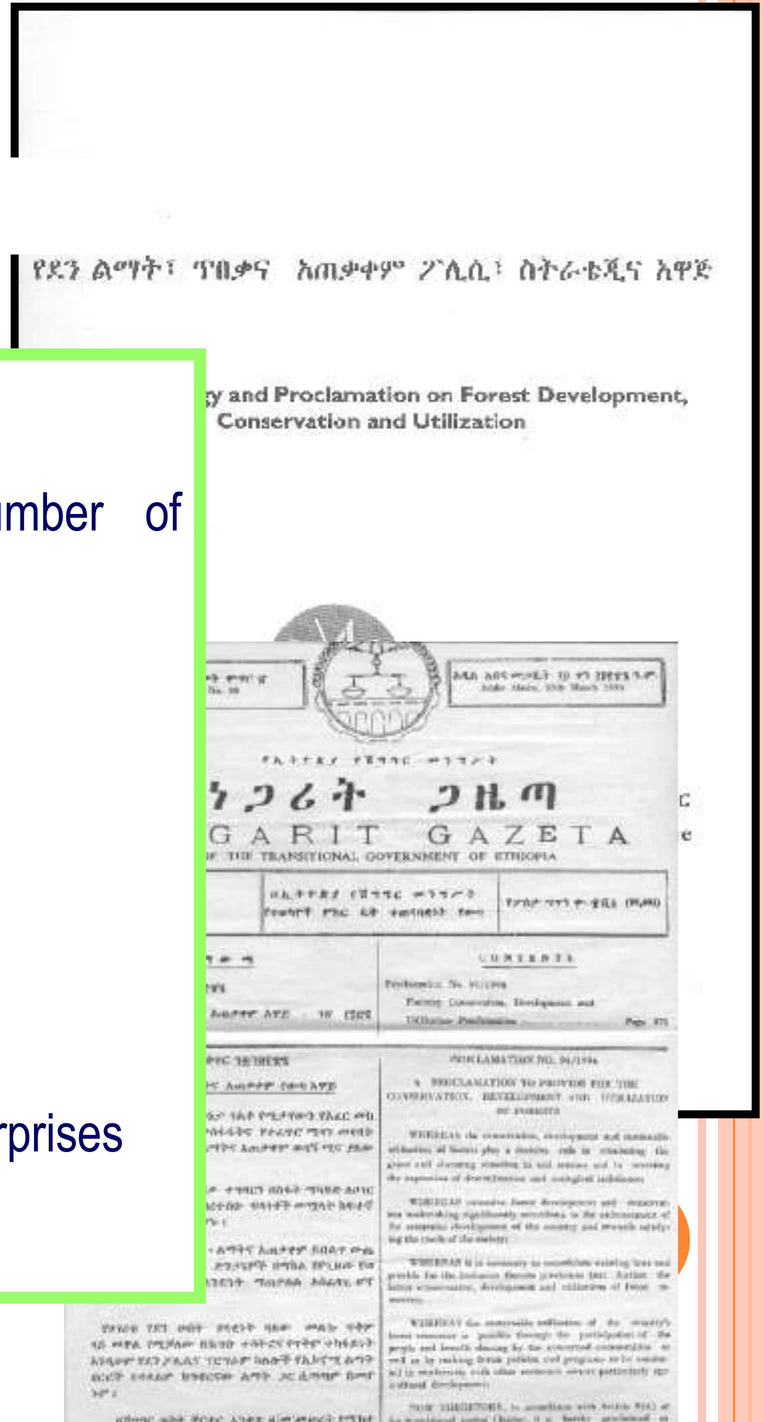

POTENTIAL ROLE AND CONTRIBUTION OF THE FOREST SECTOR

- ✓ Contribution to poverty alleviation and enhancing food and forest products security
- ✓ Contribution to energy and water resource sectors
- ✓ Contribution to the agriculture and related sectors
- ✓ Potential values from forest ecosystems and environmental services
- ✓ Job creation and income generation opportunities
- ✓ Socio-economic benefits




OPPORTUNITIES ………

Government encouraging efforts


የደን ልማት፣ ጥበቃና አጠቃቀም ፖሊሲ፣ ስትራቴጂና አዋጅ

…y and Proclamation on Forest Development, Conservation and Utilization

…ጋሪት ጋዜጣ

…GARIT GAZETA

…F THE TRANSITIONAL GOVERNMENT OF ETHIOPIA

- Existence of forest policy
- the Ethiopian Government has signed a number of international conventions such as:
  - Convention to Combat Desertification (CCD),
  - Convention on Climate Change (CCC)
  - Convention on Biodiversity (CBD)
  - Millennium Development Goal (MDG).
- Establishment of: Oromiya and Amhara Forest enterprises
- GTP and Green economy targets

Growth and Transformation Plan

	Description of the targets	2009/2010	2014/15
	NATURAL RESOURCES PROGRAM		
18	**Area of land rehabilitated (mln ha)**	**3.21**	**10.21**
19	Land developed under community based water shade development program (mln ha)	3.77	7.78
20	Total area of land subjected to soil fertility research (mln ha)	0.894	2.82
21	**Total area of land covered with forest and forest master plan (mln ha)**	**0.70**	**2.20**
22	**Area of land covered with multi-purpose trees (mln ha)**	**6.06**	**16.21**
23	**Forest coverage (mln ha)**	**13**	**18.23**
24	Increase multi-purpose trees (ha)	5,062	10,154
25	Natural resources conservation activities in pastoral areas (ha)	200,000	350,000

ETHIOPIA LAUNCHES CLIMATE RESILIENT GREEN ECONOMY

The green growth strategy was prepared by the collaboration of the EPA and the Finance, Agriculture and Industry ministries.

The plan aims to improve:

✓Crop and livestock production,

✓**Forest management and effective forestation** as well as

✓Expanding electric power generation and

✓Developing efficient and modern transport technologies

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
ENVIRONMENTAL PROTECTION AUTHORITY

Ethiopia's Climate Resilient Green Economy

OPPORTUNITIES ………

REFORESTATION/AFFORESTATION PROGRAMS

- Ethiopia since 2007 undertakes massive tree-planting campaigns in connection with the celebration of its unique Millennium.
- Based on some local sources, in Ethiopia, the four regions i.e. Oromia, SNNP, Amhara and Tigray claims planting in total close to 2.21 billion seedlings in 2009.
- The four regions had planned to plant over 7 billion seedlings in 2010 (Abayneh et al., 2010)
- This year it is planned to plant more than 5.6 Billion seedlings at national level

OPPORTUNITIES ………

- **PARTICIPATORY FOREST MANAGEMENT (PFM)**
  Six forest priority areas namely, Chilimo, Bonga, Borana, Belete Gera, Adaba-Dodola, SOS Sahel and Yabeloo forest areas are put under PFM Program and this program is financed by FARM Africa, JICA, SOS Sahel and GTZ.

- **COMMUNITY-BASED FOREST MANAGEMENT PRACTICES**
- **SUSTAINABLE LAND MANAGEMENT (SLM)**
- **AGROFORESTRY**
- **PRIORITY HIGH FORESTS AND NATIONAL PARKS**
- **CHURCH AND OTHER SACRED SITE FORESTS**

OPPORTUNITIES ………

Tree planting in home gardens and woodlots.

The main objectives of this practice are to produce fuelwood and construction poles for the community.

Moreover, trees planted around homesteads can serve as windbreaks and shelter belts for humans, as well as provide feed and shelter for animals.

Additional food supply and cash income could be obtained by planting fruit trees around homesteads.

OPPORTUNITIES ………

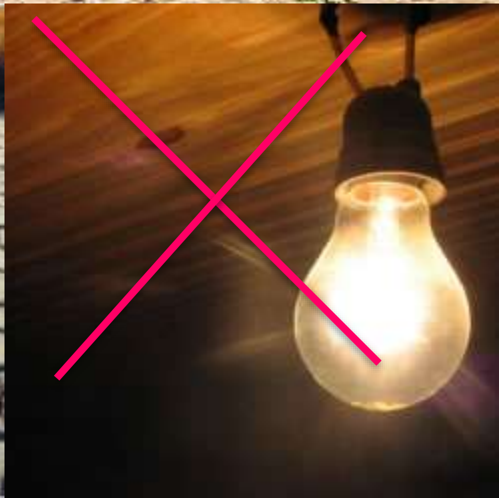
Best practices on ENCLOSURE

- The practice of establishing enclosures has emerged as a promising practice in different parts of Ethiopia.
- There is strong argument that **Tigray region** has become greener in the last few decades through area closure, soil and water conservation and tree planting activities. The plan of area closure in Tigray for 2010 is 261, 701 ha.
- The **Southern Region** is undertaking area closure at Silti, Hadya and Kambata Zones.
- The rehabilitation activities in **Amhara region** include extensive land husbandry and gully reclamations.
- The Amhara region has planned to undertake integrated watershed development with participatory approach on 131 micro catchments at zonal and wereda levels, and three major watersheds at regional level (Abayneh et al., 2010).



3. MAJOR CHALLENGES AND ITS CONSQUENCES





Challenges of forest sector in Ethiopia …….

In Ethiopia, reliable information on the vegetation resources such as their spatial coverage, distribution, changes over time etc.

Essential information are lacking or difficult to get because it is scattered and inconsistent (Demel Teketay et al., 2010).

Among the challenges of the sector, there is no national database, regular resource inventory and monitoring to provide reasonably good and up to date information for current management and future planning, strategy and policy formulations.

Sometimes conflicting statistics are found in different reports.

Most reports on Ethiopian forest resources lack clarity on how, when and who collected them.

The need for clear reforestation strategy and information

Experience from Kenya

- Average hectares afforested per year in Kenya 6,000 HA For Plantations and 5,000 for Rehabilitation of Indigenous Forests .
- Most of These Plantations Comprise Mostly *Pinus patula* and *Cupressus lusitanica* and some Eucalypts.
- Indigenous Tree Species Comprise About 5% of Plantations .
  - Kenya forest service plantations: 125,000 HA
  - Private plantations (EG TEA ESTATES): 90,000 HA
  - Trees on farmlands: 10,380 HA

Source: Ministry of Forestry & Wildlife, Forestry service (2009).

Challenges of forest sector in Ethiopia …….
DEFORESTATION

The intense forest degradation in Ethiopia and its devastating economic, ecological and socio-cultural consequences were repeatedly reported by different authors.

Consequently, this resulted gigantic consequences:

- chronic shortage of fuel, industry and construction wood,
- soil erosion and loss of soil fertility,
- destruction of habitat for wild life population,
- loss of biodiversity,
- intensification of desertification,
- pollution of water resources
- decline of production and productivity, etc.

FAO 2010 Report

TABLE 3
Trends in extent of forest 1990–2010

Country/area	Forest area (1 000 ha)				Annual change rate					
	1990	2000	2005	2010	1990–2000		2000–2005		2005–2010	
					1 000 ha/yr	%[a]	1 000 ha/yr	%[a]	1 000 ha/yr	%[a]
Angola	60 976	59 728	59 104	58 480	-125	-0.21	-125	-0.21	-125	-0.2
Botswana	13 718	12 535	11 943	11 351	-118	-0.90	-118	-0.96	-118	-1.0
Comoros	12	8	5	3	n.s.	-3.97	-1	-8.97	n.s.	-9.7
Djibouti	6	6	6	6	0	0	0	0	0	
Eritrea	1 621	1 576	1 554	1 532	-5	-0.28	-4	-0.28	-4	-0.2
Ethiopia	15 114	13 705	13 000	12 296	-141	-0.97	-141	-1.05	-141	-1.1
Kenya	3 708	3 582	3 522	3 467	-13	-0.35	-12	-0.34	-12	-0.3
Lesotho	40	42	43	44	n.s.	0.49	n.s.	0.47	n.s.	0.4
Madagascar	13 692	13 122	12 838	12 553	-57	-0.42	-57	-0.44	-57	-0.4
Malawi	3 896	3 567	3 402	3 237	-33	-0.88	-33	-0.94	-33	-0.5
Mauritius	39	39	35	35	n.s.	-0.03	-1	-2.05	n.s.	0.0
Mayotte	18	16	15	14	n.s.	-1.15	n.s.	-1.26	n.s.	-1.3
Mozambique	43 378	41 188	40 079	39 022	-219	-0.52	-222	-0.54	-211	-0.5
Namibia	8 762	8 032	7 661	7 290	-73	-0.87	-74	-0.94	-74	-0.9
Réunion	87	87	85	88	0	0	n.s.	-0.46	1	0.
Seychelles	41	41	41	41	0	0	0	0	0	
Somalia	8 282	7 515	7 131	6 747	-77	-0.97	-77	-1.04	-77	-1.
South Africa	9 241	9 241	9 241	9 241	0	0	0	0	0	
Swaziland	472	518	541	563	5	0.93	5	0.87	4	0.
Uganda	4 751	3 869	3 429	2 988	-88	-2.03	-88	-2.39	-88	-2.
United Republic of Tanzania	41 495	37 462	35 445	33 428	-403	-1.02	-403	-1.10	-403	-1.

3.1. MAJOR CONSEQUENCES OF DEFORESTATION

Depletion of important tree & shrub species

Hagenia

Juniperus

Podocarpus

Depletion of Hig

Few of High value

BBC NEWS

BBC Home > BBC News > Sci/Environment

Menu

Frankincense tree facing uncertain future

21 December 11 00:09 GMT

Vol. LXVIII No 090 25 December 2011 - Tahisas 15, 2004 Price Birr 3.00

2012

HAPPY NEW YEAR AND MERRY CHRISTMAS

FRANKINCENSE TREES UNDER THREAT

BY A STAFF REPORTER

ADDIS ABAB – This isn't a Christmas story, but a market reality as the trees that produce the amber-coloured resin are increasingly endangered, which could drive up prices for a product already in high demand.

At the Top of Texas Catholic Superstore in Amarillo, owner Morena Thompson said she noticed one-ounce packages of frankincense disappearing from displays in her 3,800-square-foot store about four months ago. She has since moved the packages into a glass case, according to *Wall Street Journal*.

"We'd go through the count and we'd come up one or two short," Thompson said. "We had to put it under lock and key."

For many Christians, frankincense is best known as one of the gifts, along with gold and myrrh, that the three wise men brought to Jesus and his parents shortly after he was born. The resin still is prized for its fragrance and used in some religious ceremonies.

The incense comes from the resin of the boswellia, a stout, gnarly-branched tree that mostly grows in the Horn of Africa. But encroaching agriculture and insects threaten to kill off most of the region's boswellia within the next 50 years, according to a study published in the Journal of Applied Ecology by a team of Dutch and Ethiopian ecologists.

While the trees historically grew from the southern Arabian peninsula to the Horn of Africa, they are now found mostly in Ethiopia, Eritrea, Somalia, Sudan and India. "There is no real sustainable management of forests" in East Africa, said Frans Bongers, a Dutch ecologist at Wageningen University and one of the authors of the study. "There are no new trees coming into the system. All trees are dying, continuously."

Part of the problem is farmers burning down the trees to make way for grazing lands for their cattle. Of the trees that haven't been destroyed, he said 85 per cent are "heavily infested by one or more long-horned beetles" that bore into the wood of adult boswellia and eat them from the inside.

Frankincense is harvested by making cuts in the trees' white, flaky bark. When the sap dries, it hardens into gold-colored nuggets. Bongers estimated that half of the 4,500 metric tons exported each year from Ethiopia is shipped to China, where it is used in traditional Chinese medicine. It also is used to make high-end perfumes.

The team of ecologists who wrote the article said that based on the mortality rate of the 12 tree stands they observed for two years, yields of frankincense could be halved within 15 years.

Boswellia trees which produce frankincense mostly grow in the Horn of

Aficionados sniff at the quality of the frankincense farmed in India, preferring to pay more for product harvested in East Africa, said Bill Hof, manager of Scents Of The Earth in Cape May, N.J.

Hof says he already faces a host of challenges keeping it in stock. A change in US regulations temporarily classified it as a chemical, which made shipments from places like Oman difficult and cut off supplies for the first half of the year. And individual harvesters sometimes have safety issues. "People we deal with get shot at, especially in Somalia," Hof said.

But not all vendors are concerned. "I'm not going to worry about the future," Thompson said. "God holds the future in His hands. It's His reality, not ours. If you worry about everything, you'd go crazy."

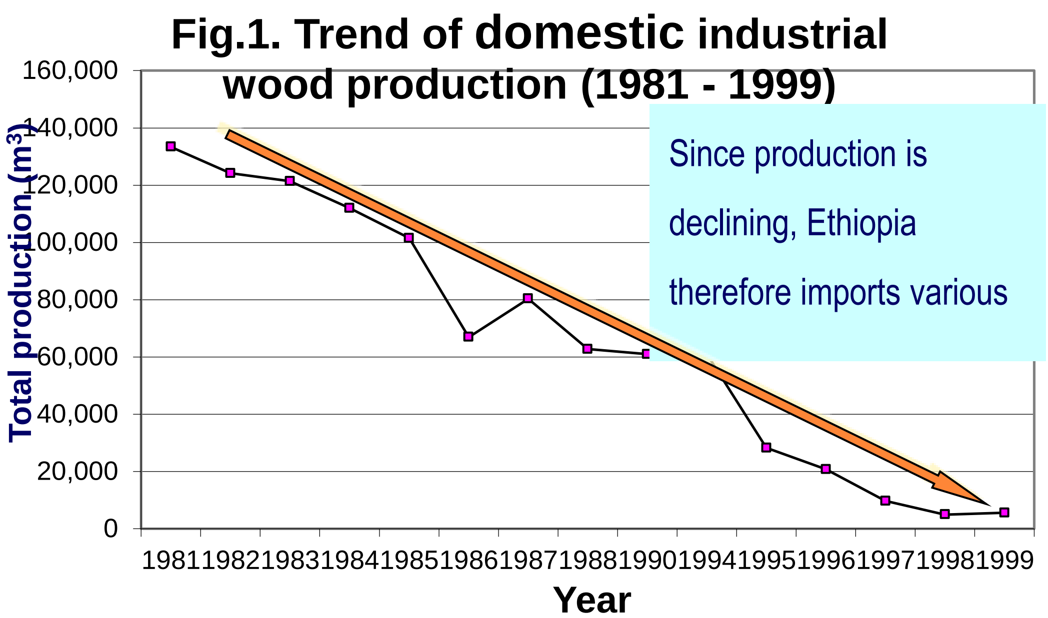
UN General Assembly President pleased

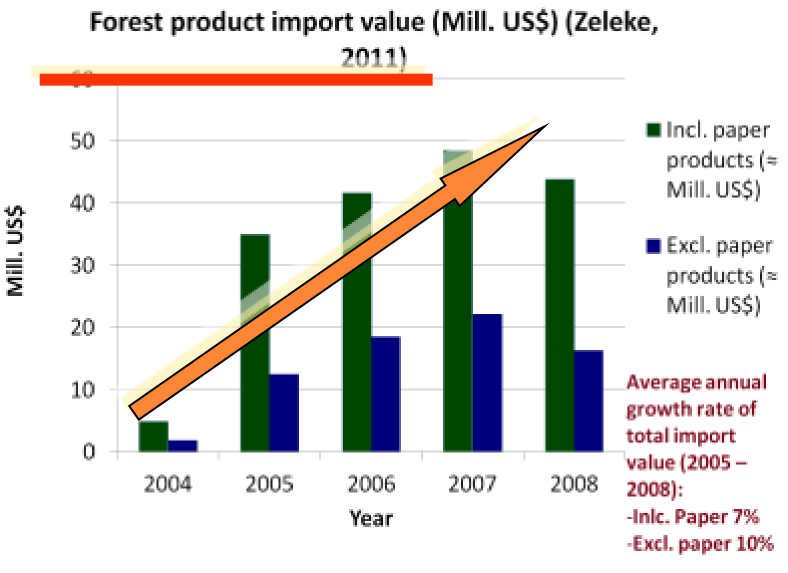
Mass flowering and death of bamboo

a potential threat to biodiversity and livelihoods in Ethiopia

FOREST RESOURCES AND WOOD PRODUCT SUPPLY …

Supply of industrial wood (sawnwood, plywood, veneer, etc.) from existing forest resources has declined. (Zeleke, 2011)

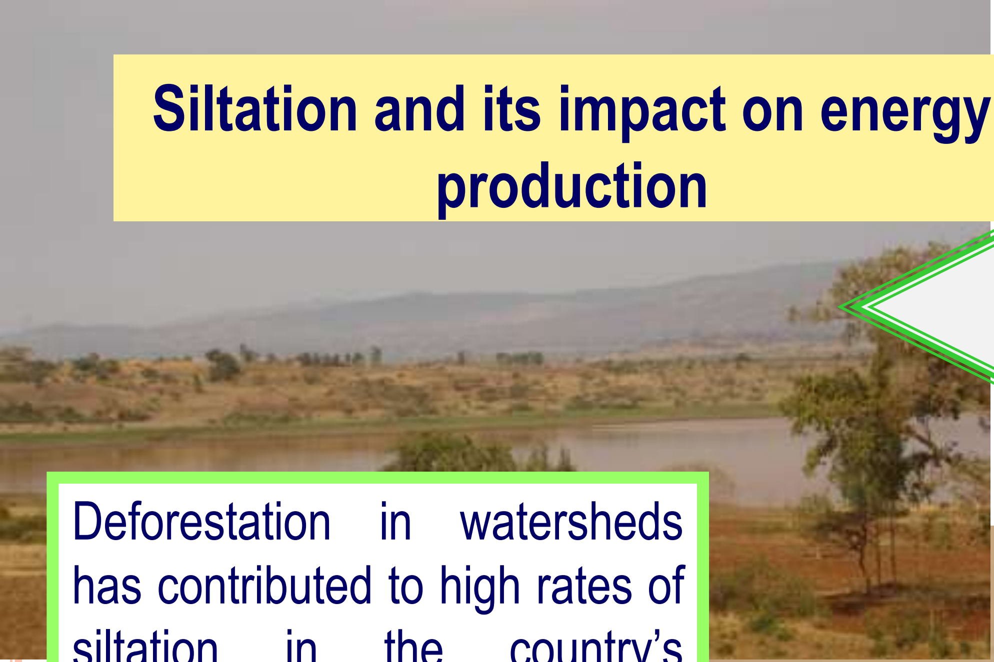




Soil erosion, fertility loss & reduction of agricultural productivity

Deforestation is one of the major factors contributing to land degradation by exposing the soil to various agents of erosion and degradation.

Siltation and its impact on energy production



Are the watersheds of the newly constructed modern dams properly protected from siltation?

Deforestation in watersheds has contributed to high rates of siltation in the country's reservoirs


Tekeze watershed and dam
Image © 2011 GeoEye
© 2011 Europa Technologies
© 2011 Google
Google earth

ማ ኅ በ ራ ዊ

የፊንጫ የውኃ ግድብ በደለል እየተሞላ ነው

በታደሰ ገብረማርያም

የፊንጫ የኃይል ማመንጫ አገልግሎት እንዲውል የተገነባው የውኃ ማከፋፈያ ግድብ እና የመስኖው ፕሮጀክት በአፈር መከላት ሳቢያ በደለል እየተሞሉ ሲሆን በተለይም ለመስኖው ፕሮጀክት የሚቀርበው ውኃ ለብክለት እየተዳረገ መሆኑን አንድ ጥናት አመለከተ።

ናሽናል ሴንተር ኦፍ ኮምፒቴሽን ኢን ሪሰርች ኖርዝ-ሳውዝ የአፍሪካ ቀንድ ማስተባበሪያ ጽሕፈት ቤት ለሦስት ቀናት ያህል ባካሄደው የባይንስ ፖሊሲ ፎረምና ሪጅናል ዐውደ ጥናት ላይ በአቶ ጌታሁን ኪቲላ ተዘጋጅቶ በአርሲስዲንግ መልክ የቀረበው ጥናት እንደሚያመለክተው የደለል መሙላቱና የብክለቱ አደጋ ሊከሰት የቻለው በተፋሰሱ አካባቢ በሚገኘው ኮረብታ ላይ የሰዎች መኖርና የእርሻ ሥራ መከናወን ነው።

ሰዎቹ ቀደም ሲል ይኖሩ የነበሩት በፊንጫ የውኃ ተፋሰስ ዙሪያ እንደነበር በ1996 በተካሄደው ጥናት ተረጋግጧል። የግድቡ ግንባታ ሲጀመር ከቀዬአቸው ተፈናቅለው አሁን ወደሚገኙበት ኮረብታ ላይ መስፈራቸውን ለማወቅ ተችሏል።

ጥናቱ እንዳብራራው፣ በኢትዮጵያ ውስጥ አካባቢያቸው በሚገባ ተጠብቆ ከሚገኙት ሥፍራዎች መካከል አንደኛው የፊንጫ ሸለቆ ነበር። የመሬቱን አቀማመጥና ሁኔታ የሚያሳዩ ቶፖግራፊ ተሀዋርቶ መውጣቱ ደግሞ ለአካባቢው ተደራሽነት አስተዋጽኦ አድርጓል። ይህ ዓይነቱ ሁኔታ ግን በአካባቢው የሚገኙት ቁጥቋጦዎች፣ አፈርና ውኃው ለጉዳት እንዲጋለጡ አድርጎታል። ይህንን ድርጊት የሚያስቀር ተግባራዊ ዕርምጃ ካልተወሰደ በስተቀር በኢንቨስትመንቱ ላይ ከፍተኛ የሆነ አሉታዊ ተጽዕኖ ያሳድራል።

በኮረብታው ላይ የሚካሄደው እርሻ የውኃ መውረጃ ቦይ እንደሌለው፣ በዚህም የተነሣ ለእርሻ መዋል የሚገባው ሌላው መሬት እልፍ እልፍ ውኃ ማቆር እንደጀመረና ይህ ዓይነቱም ሁኔታ ምርታማ የነበረውን መሬት እንዲበላሽ ማድረጉን ተጠቅሷል። ለመሬቱ ውኃ ማቆር አብይ ምክንያቱ ደካማ የሆነ የውኃ መውረጃ ቦይና በአግባቡ የማይከናወን የመስኖ የውኃ ማኔጅመንት መሆኑን ጥናቱ ጠቁሟል። ፕሮጀክቱ ተግባራዊ ከሆነ ከ10 እና 15 ዓመታት በኋላ ከአካባቢው መሬት መካከል 20 ከመቶ ያህሉ ውኃ ማቆሪያ ሆኗል። በዚህም የተነሳ በአሁኑ ጊዜ በአፈር መከላት (መሸርሸር) እና በውኃ ማቆር ሳቢያ ስምንት ከመቶ የሚሆነው መሬት ከምርታማነት ውጪ ሆኗል።

እንደ ኢትዮጵያ የመሳሰሉ ታዳጊ አገሮች የመስኖ ልማት ለድህነት ቅነሳ አንደኛው ስትራቴጂ ነው ብለው ያስባሉ። ከኢትዮጵያ አኳያም የመስኖ ልማት ለሀገሪቱ የምግብ ዋስትናና ልማት ቅድሚያ ትኩረት የሚሰጠው ዘርፍ ሆኖ ተገኝቷል። የመስኖ ልማት ጥምር ጥቅም ቢኖረውም የገጠሩን የድህነት መጠን በመቀነስ ረገድ የሚኖረው ፋይዳ እስከምን ድረስ ነው የሚለውና እንዲሁም ተደራሽነት ሁሉም ይስማማል።

መስኖ በአግባቡ ካልተከናወነና አስፈላጊው ቁጥጥርና ክትትል ካልተደረገበት በአፈርና በሀገሪቱ ምርታማነት ላይ አሉታዊ ተጽዕኖ ማሳደሩ አይቀሬ ነው። ከዚህ አኳያ በወቅቱ ቁጥጥርና ክትትል ማከናወን አሉታዊውን ተጽዕኖን ለማስቀረት ይረዳል። ይህ ዓይነቱ የመስኖ ልማት ደግሞ የጎበርናውን ዘርፍ ለማስፋፋት

> ፕሮጀክቱ ተግባራዊ ከሆነ ከ10 እና 15 ዓመታት በኋላ ከአካባቢው መሬት መካከል 20 ከመቶ ያህሉ ውኃ ማቆሪያ ሆኗል:: በዚህም የተነሳ በአሁኑ ጊዜ በአፈር መከላት (መሸርሸር) እና በውኃ ማቆር ሳቢያ ስምንት ከመቶ የሚሆነው መሬት ከምርታማነት ውጪ ሆኗል::

የሚያስችል ምቹ ሁኔታ ይፈጥራል።

የዚህ ጥናት ዋና ዓላማ ለመስኖ ልማት ተስማሚ ሲሆን የሚችለውን ውኃ ለመዳሰስ፣ ከውኃ ተፋሰስ በላይ የሚካሄድ የእርሻ ሥራ በውኃ አቅርቦት ጥራት ላይ የሚያስከትለውን ተጽዕኖ ለመለየት፣ የከርሰ ምድር የውኃ ሁኔታና የጥራት ደረጃን ለመረዳት፣ ጉዳዩ የሚመለከታቸውን ባለድርሻ አካላትን (ተመራማሪዎች፣ ውሳኔ ሰጪ አካላትና ተጠቃሚዎች) ላይ ግንዛቤ ለመፍጠር ነው።

ከታኅሣሥ 30 ቀን እስከ ጥር 2 ቀን 2004 ዓ.ም. ድረስ በተከናወነው በዚሁ ፎረምና ዐውደ ጥናት ላይ በኢትዮጵያ ቀላማ ሥፍራዎች የተፈጥሮ ሀብት ላይ ትኩረት ያደረገ ግጭት፣ ለልማት የሚውሉ ምርቶችን ለማከናወን የሚያስችል የልምድ ልውውጥ፣ በሀረና ማኅበረሰብ ለዶታ፣ ለወሊብና ለኢትዮጵያዊ ኢንፌክሽን ተጋላጭነት፣ የጃትሮፋ ምርት በገጠሩ የኑሮ ሁኔታ ላይ ያስከተለው ተጽዕኖ፣ ለድህነት ቅነሳ የሚውል የብሔራዊ ልማት ስትራቴጂ፣ በላይኛው የዓባይ ተፋሰስ የአፈርና የውኃ ሀብቶች ለአየር ንብረት ለውጥ ተጋላጭነት በሚሉና በሌሎችም በርካታ ርእሶች ላይ ትኩረት ያደረጉ ጥናታዊ ጹሑፎች ቀርበው ውይይትና የሐሳብ መለዋወጥ ተደርጎባቸዋል።

አቶ ብርሃኑ ደበሌ የጽሕፈት ቤቱ አስተባባሪ እንደገለጹት፣ ፎረሙ ተመራማሪዎች፣ የልዩ ልዩ መንግሥታዊና መንግሥታዊ ያልሆኑ ድርጅቶች ከፍተኛ የፖሊሲ አውጪዎች ቢጋራ ተገናኝተው ከፖሊሲ ጋር በተያያዙ የምርምር ግኝቶች ላይ የተወያዩበት ነው። ዐውደ ጥናቱ ደግሞ ተመራማሪዎች በምርምር የተደረሰባቸውን ግኝቶች የሚመዝኑበትና የተከራከሩበት ፕሮግራም ነው።

እስካሁን ድረስ በልዩ ልዩ ጉዳዮች ላይ ትኩረት ያደረጉ በርካታ የምርምር ውጤቶች በመደርደሪያ ላይ ተደርድረው እንደተቀሩና ተግባራዊ የሆኑት ግን በጣት የሚቆጠሩ ወይም ዝምም ጉዳዮች ብቻ እንደሆኑ ተናግረዋል። በዚህ ዓይነቱ ሂደት ለተከናወኑ የምርምር ሥራዎች ላይ የዋለው የሰው ጉልበት፣ ኢንቨስት የተደረገው ገንዘብና ማቴሪያል ውጤት አልባ ሆኖ መቅረቱን ገልጸዋል። በፎረሙ ላይ የተሠባሰቡት ሐሳቦች ተመራማሪዎች፣ ፖሊሲ አውጪዎችና ፖሊሲውን ተግባራዊ የሚያደርጉ አካላት በአንድ ላይ ተገናኝተው እንዲነጋገሩበት በመጠቀም፣ እንዲሁም ፖሊሲው በማዘጋጀት ላይ የተመሠረተና ትግበራውም በምርምር ግኝት የሚመራ እንዲሆን በማድረግ ረገድ የሚያደርግ አስተዋጽኦ ያበረክታል የሚል እምነት እንዳላቸው አስታውቀዋል።

አቶ ምስክር ነጋሽ የኢትዮጵያ ኤሌክትሪክ ኃይል ኮርፖሬሽን ኮርፖሬት ኮሙኒኬሽን ዳይሬክተር ደውላችን የውኃውን ብክለት አስመልክተን በሰጡት ማብራሪያቸው ጥያቄ ማንም የደረሰን ጥናት ሊያካሂድ እንደሚችል፣ ኮርፖሬሽኑ ግን ይህንን ጥናት እንደማያውቀው ተናግረዋል።

"የፊንጫ የኃይል ማመንጫ የተገነባው በትድሚያ በርካታ የሆኑ ልዩ ልዩ ጥናቶች ከተከናወኑ በኋላ መሆኑ መታወቅ ይኖርበታል። ወደፊትም የሚያጋጥሙ ችግሮችን ጉዳዩ ከሚመለከታቸው ባለድርሻ አካላት ጋር ለመፍታት ጥረት ያደርጋል፣" ብለዋል።

የበሬ ጥብስ ወጥ

(ለ5 ሰው)

አስፈላጊ ጥሬ ዕቃዎች

- 1 ኪሎ ግራም ጉረድ፣ ጉረድ ተደርጎ በረጅሙ የተቆራረጠ የታላቅ ሥጋ
- 2 መካከለኛ ጭልፋ (200 ግራም) የተገረደፈ ቀይ ሽንኩርት
- 3 የሾርባ ማንኪያ አዋዜ
- 5 የሾርባ ማንኪያ ቅቤ
- ግማሽ የሻይ ማንኪያ ጥቁር ቅመም
- 2 የሾርባ ማንኪያ ርጥብ ቅመም
- 2 የሻይ ማንኪያ ምጥን ሽንኩርት
- 2 የሾርባ ማንኪያ ዘይት
- 6 የሾርባ ማንኪያ (100 ሚሊ ሊትር) በጠጅ ወይም በውሃ የተበጠበጠ ርጥብ ቅመም
- 1 የሻይ ማንኪያ መከለሻ
- 2 የሻይ ማንኪያ ጨው

አዘገጃጀት

- ቀይ ሽንኩርቱን በውሃ ብቻ ማቁላላት፤
- ምጥን ሽንኩርት ጨምሮ ውሃ ጠብ እያደረጉ ማቁለል፤
- ሽንኩርቱ እንዳያር ወይም አዋዜ ሲጨመር እያረረ እንዳያስቸግር ዘይት መጨመር፤
- አዋዜውን ጨምሮ በደንብ ማቁላላት፤
- ሥጋውን መጥበሻ ወይም ብረት ምጣድ ላይ በደንብ ጠብሶ ከነ ውሃው መጨመር፤
- ውሃ ሳይጨምሩ ርጥብ ቅመምና ጥቁር ቅመም ጨምሮ በደንብ ማብሰል፤
- ቅቤ መጨመርና መረቅ እንዳይኖረው ማንተክተክ፤
- እሳቱን ዝቅ አድርጎ በጠጅ ወይም በውሃ የተበጠበጠውን ርጥብ ቅመም መጨመርና ለ10 ደቂቃ ማንተክተክ፤
- መከለሻውንና ጨውን አስተካክሎ ማውጣት፤

(ጸደ ብርሐን ከፍተ (ሰ ሺርፍ)፣ የባህላዊ ምግብ አዘገጃጀት፣ 2003)

India, Pancheshwar High Dam

CHINA, water catchment for the town of Funchal, where a hydroelectric power plant works since 1971.

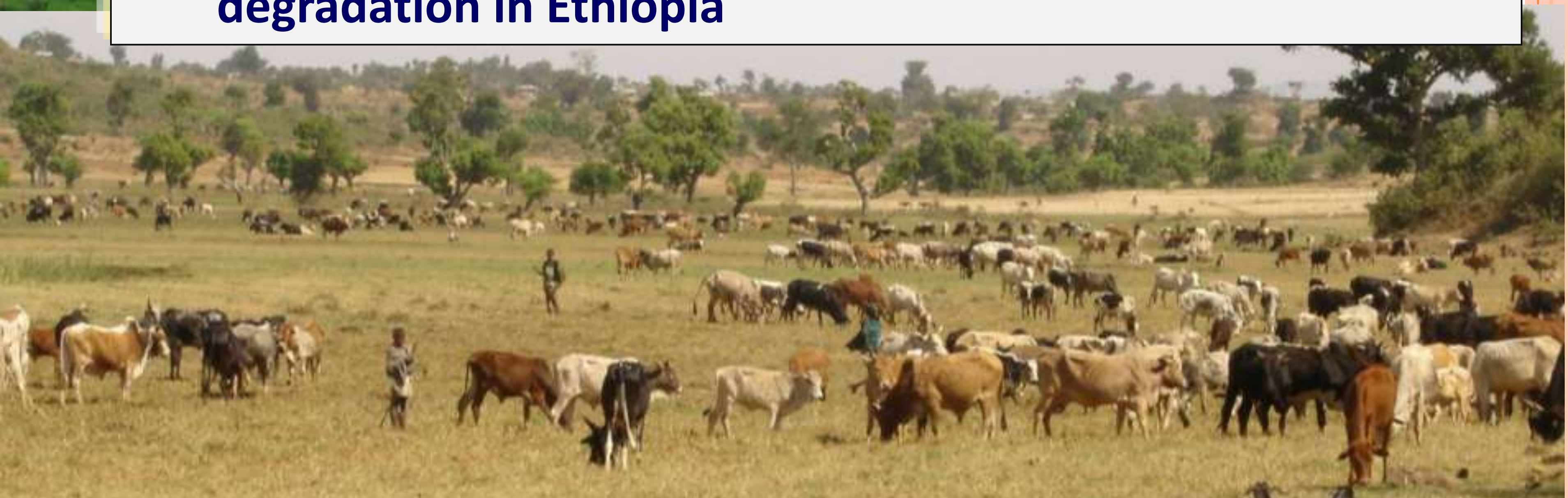
URBAN FORESTRY.........

- Urban greening is not been considered in the new urbanizations of Addis Ababa and elsewhere the country.
- Therefore, new urbanizations are totally covered by buildings and roads, with no space left for ornamental tree planting and green areas.

Entoto forest is rapidly dwindling by **agricultural expansion** and **enlargement of the city** upwards the mountain.


The direct and indirect consequences of deforestation and degradation in Ethiopia could be larger than these and impossible to properly quantify their economical, social and ecological damages.

3.2. Major driving factors for deforestation and forest degradation in Ethiopia



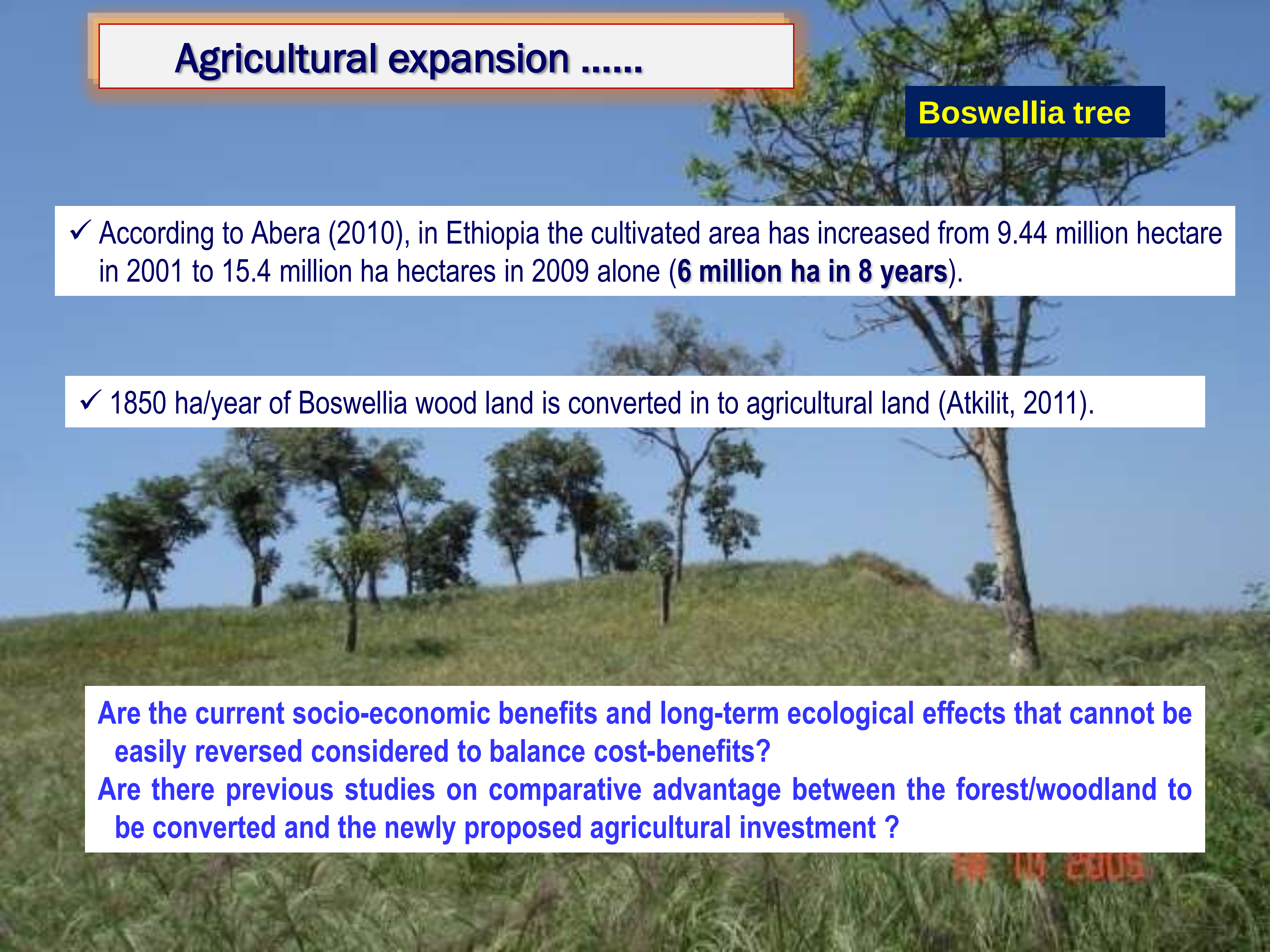
Major driving forces for deforestation and forest degradation in Ethiopia

Although there are several reasons for the depletion of forest resources, the following are considered major:

- ✓ Increases in population and consequent increases in the demand for agricultural land,
- ✓ Settlements around forest areas and encroachments;
- ✓ Forest fires;
- ✓ The expansion of large commercial farms on forest lands;
- ✓ The absence of a strong forest administration system;

Agricultural expansion

Agricultural expansion ……



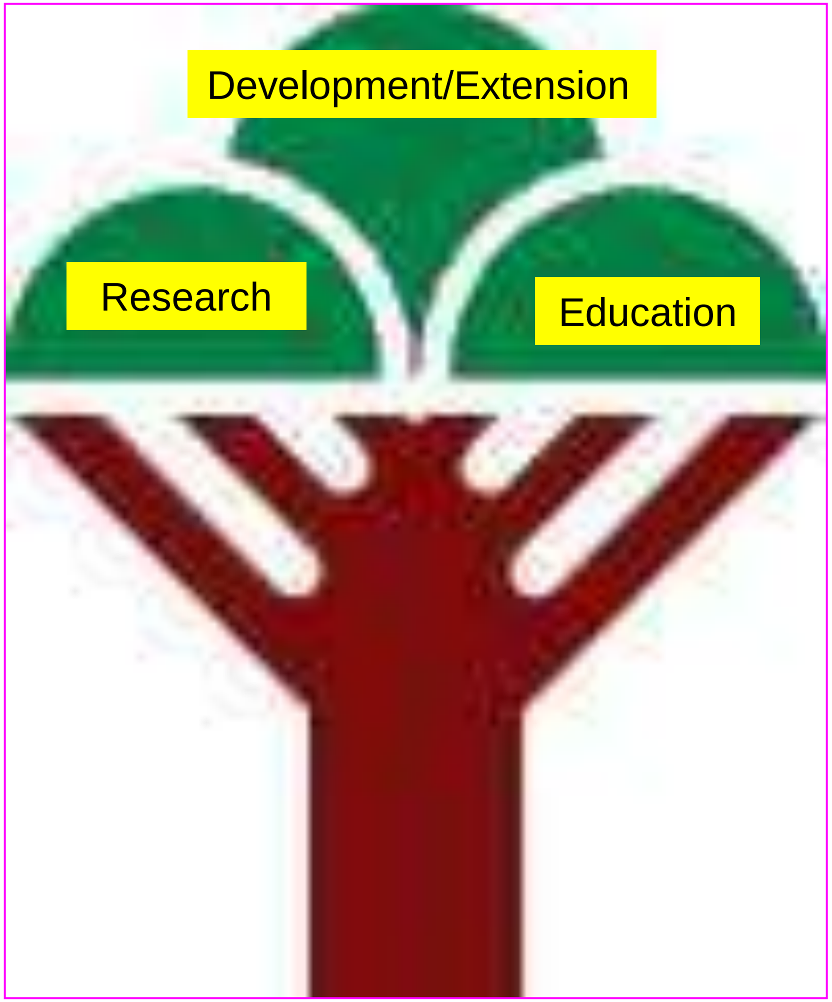
- ✓ According to Abera (2010), in Ethiopia the cultivated area has increased from 9.44 million hectare in 2001 to 15.4 million ha hectares in 2009 alone (**6 million ha in 8 years**).

- ✓ 1850 ha/year of Boswellia wood land is converted in to agricultural land (Atkilit, 2011).

Are the current socio-economic benefits and long-term ecological effects that cannot be easily reversed considered to balance cost-benefits?

Are there previous studies on comparative advantage between the forest/woodland to be converted and the newly proposed agricultural investment ?

Lack of strong coordinating Forestry Institution



Lack of strong coordinating Forestry Institution ……..

The institutional arrangements in the forest sector have been unstable suffering from frequent restructuring.

Such lack of stability in the sectors organizational structure is often cited as one of the major bottlenecks for the lack of coordinated, effective and long term management and development successes in Ethiopian forestry (Demel et al., 2010 ; Mulugeta and Tadesse, 2010).

Institutional Instability of the Forestry Sector

- 1945–1950 (E.C) Forestry Division with in Ministry of Agriculture (MoA)
- 1951 (E.C) Forestry became a semi autonomous department with in MoA
- 1955 Department dissolved & merged with MoA
- 1971 State Forest Development Agency
- 1980 Agency amalgamated with wildlife sector to form FAWCDA
- 1984 FAWCDA dissolved & became part of MoA as NRCD, Main Department (Deputy Minister level)
- 1992 Became Ministry of Natural Resources Conservation & Environmental Protection (MNRCEP)
- 1995 MNRCEP divided back to form two institutions (MoA & EPA)
- 2004 MoARD (Natural Resources Conservation Dept. took control of all aspects of forest & wildlife)
- 2004 …Team within the Natural Resource Development directorate of MoA

Source: **FfE, 2008.**

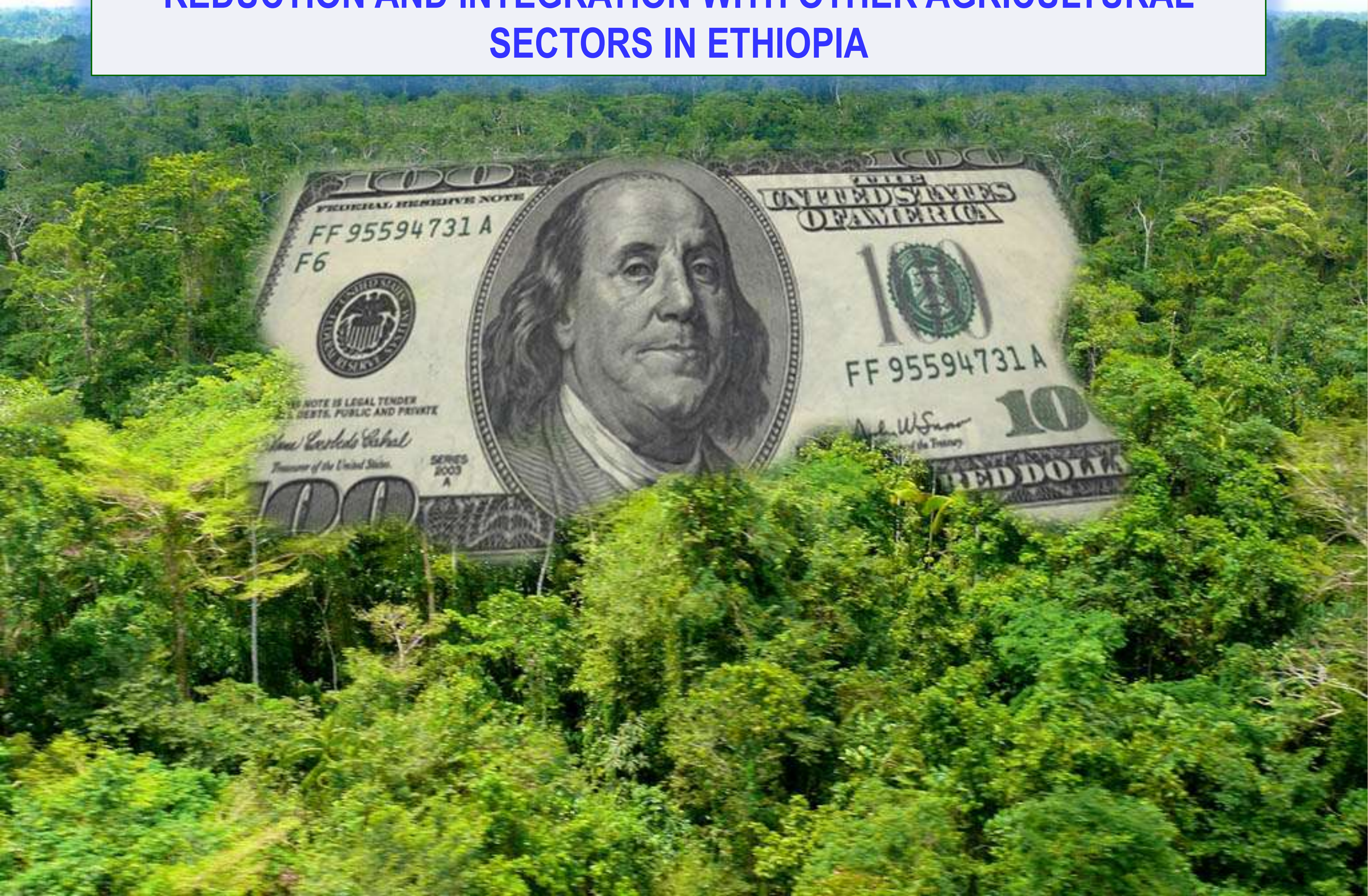
CONSEQUENCES OF UNSTABLE FOREST SECTOR

- ✓ Poor coordination, monitoring and evaluation of forestry development initiatives and impacts
- ✓ Poor education-research-extension-policy making
- ✓ Low resources allocations (manpower, budget and logistic)
- ✓ Poor inter-sectoral coordination and lag in policy implementation

Ethiopia deserves more strong and stable forestry research, development and education institutions than several African countries, by several reasons:

- Ethiopia is huge country and is the second most populous country in Africa
- More Diverse agroecology and suitable for numerous tree/shrub species
- Very rich in flora and fauna
- Agrarian country and + 90 % of the population use wood for fuel and construction
- Availability of wider forest products (Timber and non timber) for international markets.
- Severe deforestation and then drastic consequences.
- To use emerging opportunities such as carbon trading.
- Closeness to middle east countries to export its forest products.
- To properly achieve government GTP and green economy targets.

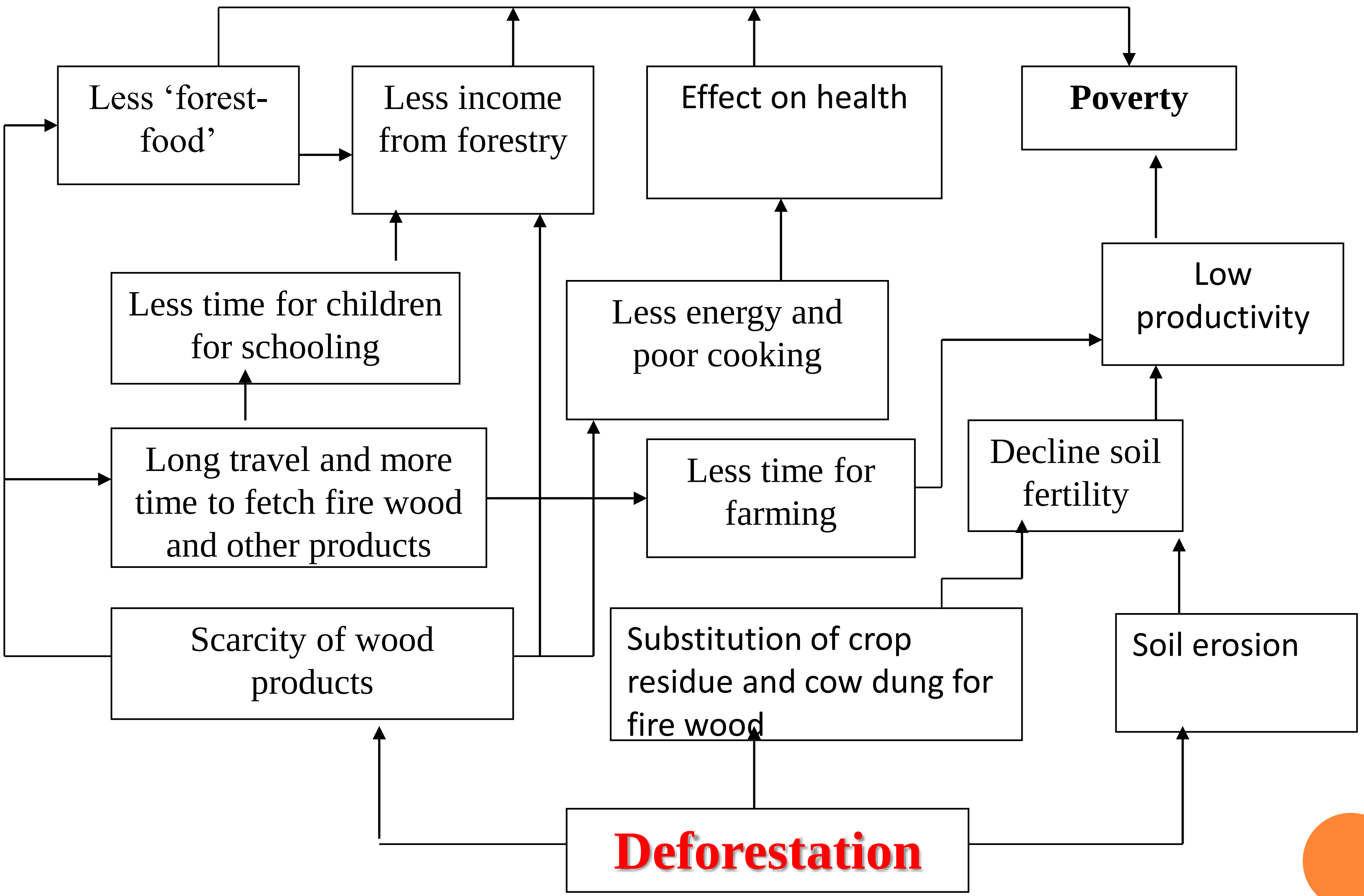
4. THE CONTRIBUTION OF FOREST DEVELOPMENT TO POVERTY REDUCTION AND INTEGRATION WITH OTHER AGRICULTURAL SECTORS IN ETHIOPIA



Forests in relation to poverty in Ethiopia

- ✓ Contribution to poverty alleviation and enhancing food and forest products security
- ✓ Contribution to energy and water resource sectors
- ✓ Contribution to the agriculture and related sectors
- ✓ Potential values from forest ecosystems and environmental services
- ✓ Job creation and income generation opportunities
- ✓ Socio-economic benefits

Deforestation and poverty links in Ethiopia



Source: Mulugeta and Demel, 2005

Forests and trees and agricultural productivity

- There are numbers tree/shrub species that can enrich agricultural soils and then increase its productivity.
- The loss of soil and the deterioration in fertility, moisture storage capacity, and structure of the remaining soils, all reduce the country's agricultural productivity (Badege, 2001).
- High price and shortage of inorganic fertilizer are among the leading factor affecting small holer farmers in Ethiopia.

Forests and trees and agricultural productivity ....

Monetary Estimate (Degradation) of soil resources (value of productivity loss) (Abayneh Esayas et al., 2008)

Year	Net annual soil loss (in tons)	Cumulative net soil loss (in tons)	Equivalent annual loss in cultivated land (hectare)	Value of annual loss in agricultural productivity (ETB)	Present value of annual loss in agricultural productivity (ETB)
1995	161,821,448	161,821,448	23140.46706	63,913,970	639,139,700
2005	**194,012,548**	1,711,871,585	27743.79436	76,628,360	**766,283,600**

Therefore, I f we reduce deforestation and increase afforestation/reforestation programs on the watershades, the soil loss will be significantly reduced

The pressing demand for energy has also pre cluded rural communities from leaving cow dung and crop residues to enrich soil nutrients.

Role of forests as source of animal feed

- ✓ Ethiopia's livestock population is the highest in Africa.
- ✓ Forest grazing and browsing is major source of feed for the vast population of livestock in Ethiopia.
- ✓ The price of animal products: milk, meat, etc has increased considerably. One of the reasons mentioned is shortage of animal feed.
- ✓ However underutilized there several multipurpose tree/shrub species

Role of forests as source of animal feed

Valuation of the benefits of fodder (1995 and 2005) (Sisay Nune et al., 2008).

	Forests		and Shrub land		Bamboo	
	1995	2005	1995	2005	1995	2005
Total yield of fodder in forests (t)	71,070	60,287	8,222,434	7,968,799	52,017	52,017
Average productivity of fodder on agricultural land (t/ha)	13.50	13.50	13.50	13.50	13.50	13.50

Production of forest goods and services, 1995 and 2005 (National level)

	good/ forest service	1995	2005
1	**Fodder (ETB)**	**1,195,571,724**	**1,732,947,000**
2	coffee (ETB)	23,652,200	70,156,800
3	Semi forest coffee (ETB)	53, 467, 297	190, 793, 827
4	Honey (ETB)	85, 501, 662	108, 046, 220
5	Beeswax (ETB)	16, 901, 780	42, 221, 138

Acacia saligna

Table 2. Fodder and soil improving tree and shrub species identified in the highlands of central Ethiopia

Species	Local names	Family names	Major uses
Dombeya torrida (J.F. Gmel.) P. Bamps	Danisa	Sterculiaceae	FOD[1], SFIM[2]
Hagenia abyssinica (Bruce) J.F. Gmel.	Heto	Rosaceae	SFIM, FOD
Buddleja polystachya Fres.	Anfari	Loganiaceae	FOD, SFIM
Maytenus senegalensis (Lam.) Exell.	Kombolcha	Celastraceae	FOD
Enset ventrcosum (Welw.) Sheeseman	Workie	Musaceae	FOD
Maesa lanceolata Forsk.	Abeyi	Myrsinaceae	FOD
Olea africana Mill.	Ejersa	Oleaceae	FOD
Rhamnus prinoides L' Her.	Gesho	Rhamnaceae	FOD
Rubus apetalus Poir.	Gora/Yedega Injore	Rosaceae	FOD, SFIM
Rubus pinnatus Willd.	Gura/ Yedega Injore	Rosaceae	FOD, SFIM
Salix subserrata Willd.	Barodo	Salicaceae	FOD
Vernonia amygdalina Del.	Ibicha	Asteraceae	FOD
Vernonia auriculifera Hiern.	Chochinga	Asteraceae	SFIM, FOD
Myrica salicifolia Hochst. ex A. Rich.	Reji	Myricaceae	SFIM, FOD
Pittosporum viridiflorum Sims.	Sole	Pittosporaceae	FOD
Myrsine africana L.	Kechemo	Myrsinaceae	FOD
Arundinaria alpina K. Schum.	Kerkeha	Bambusaceae	FOD
Podocarpus gracilior Pilg.	Birbirsa	Podocarpaceae	FOD
Juniperus procera Hochst. ex Endl.	Gatira	Cupressaceae	SFIM
Lantana trifolia L.	Kusaye (kese)	Verbenaceae	FOD
Phytolacca dodecandra L' Her	Indode	Phytolaccaceae	SFIM
Hypericum revolutum Vahl	Hini (Ini)	Hypericaceae	FOD
Urtica simensis Hochst. ex steud.	Dobi (sama)	Urticaceae	SFIM
Achyranthes aspera L.	Dergu	Amaranthaceae	FOD
Calpurnia subdecandra L' Her. Schweikerdt.	Cheka (digita)	Papilionaceae	FOD
Schefflera abyssinica (Hochst. ex A. Rich.) Harms	Luke	Araliaceae	SFIM
Senecio gigas Vatke	Osolie	Asteraceae	SFIM
Kalanchoe deficiens (Forsk) Asch. & Schweinf.	Bosokie	Crassulaceae	SFIM
Pterolobium stellatum (Forsk.) Chiov.	Arangama/qontir	Caesalpiniaceae	FOD
Apodytes dimidiata E. Mey. ex Benth.	Odabeda	Icacinaceae	FOD
Dracaena steudneri Schweinf. ex.	Lankuso/Hareg	Agavaceae	FOD, SFIM
Trichilia roka (Forsk.) Chiov.	Anona	Meliaceae	SFIM
Stephania abyssinica (Qu. – Dill & A. Rich.) Walp.	Ido-Antuta/Yeayiti Areg	Menispermaceae	FOD
Clematis hirsuta Perr. & Guill.	Hida, Idefeti/Azo hareg	Ranunculaceae	FOD
Acacia abyssinica Hochst. ex Benth	Lafto/Bazra Girar	Mimosaceae	FOD
Nuxia congesta R. Br. ex Fres.	Qawisa/Chechiho	Loganiaceae	FOD
Leonotis ocymifolia (Burm.f.) M.Iwarsson	Bokolu	Lamiaceae	SFIM
Maytenus ovatus (Wall. ex Wight & Arn.) Loes.	Anjito/Atati	Celastraceae	FOD

[1] Fodder

[2] Soil fertility improvement

Source: Kindu et al, 2007

Faidherbia albida, Sesbania sesban, etc..

Sesbania sesban is one of the exotic multipurpose fodder trees introduced in the Ethiopian highlands for **livestock feed** and **soil conservation**.

With the currently available Sesbania trees on-farm, farmers could only cover about 30% of the requirements for meat or milk production (Abebe Mekoya, 2008).

Food trees and their contribution to livelihoods

Food trees and their contribution to livelihoods

- In Ethiopia, there are about 370 indigenous food plants out of which 182 species are shrubs/trees with edible fruits/seeds.
- Thus, food from the wild can make supplemental, seasonal and emergency contributions to household food supplies, thereby contributing to the food security of communities.
- Such food items are also taken to markets in both rural and urban areas, in a wide variety of plant products, thereby generating income for households (Demel and Abeje, 2005).

Moringa

7 times **the Vitamin C of Oranges**

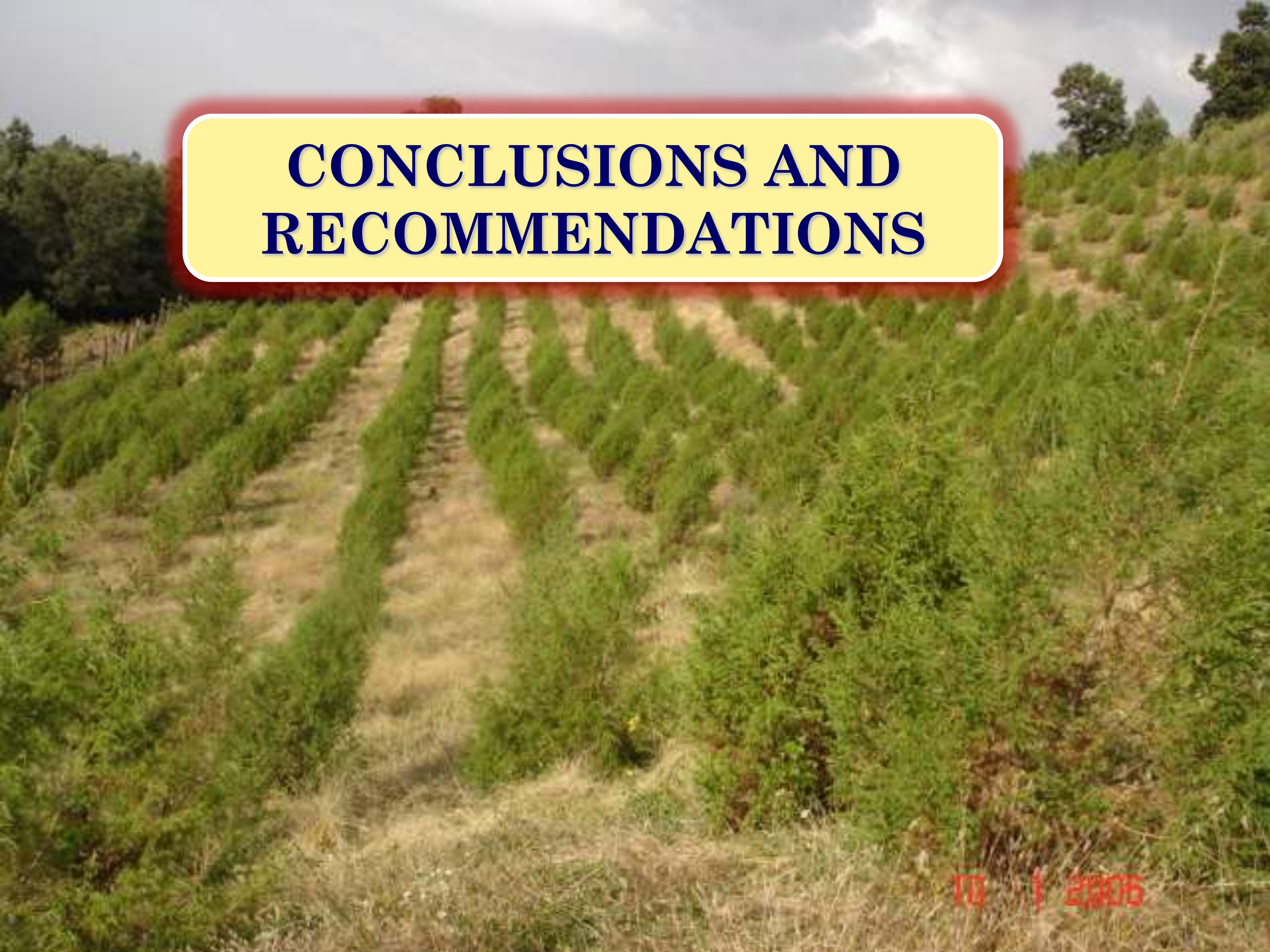
4 times **the Vitamin A of Carrots**

4 times **the Calcium of Milk**

3 times **the Potassium of Bananas**

2 times **the Protein of Yogurt**

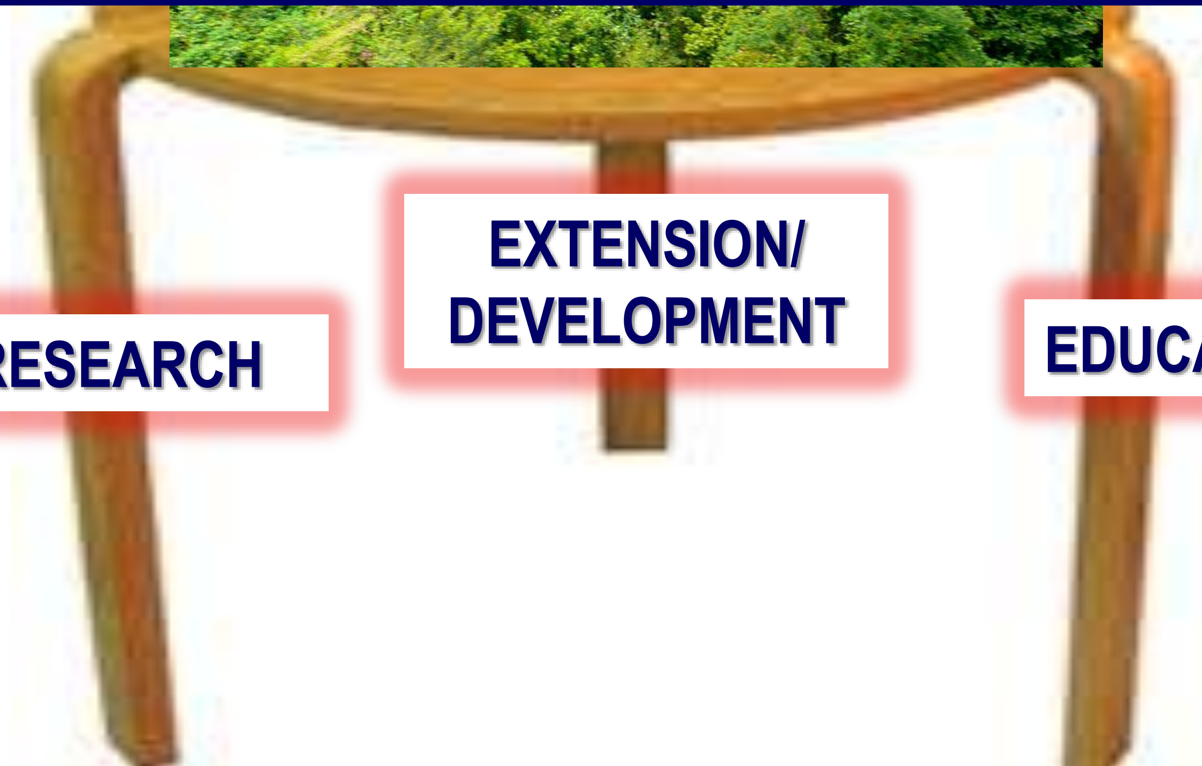
CONCLUSIONS AND RECOMMENDATIONS



Conclusions & Recommendations …

- Even if there are encouraging efforts in this country, yet lots of works are remaining and deforestation problem is being undergoing with even more drastic consequences.
- The theme of this workshop is "Sustainable Agricultural Intensification in Ethiopia and its role on the climate resilient green economy initiative in Ethiopia"
- All development and transformation plans must not target at the expense of forests destruction, biodiversity losses and environmental degradation.
- All development plans have to follow holistic and integrated approaches thereby all sectors including agriculture, industry, forestry and the whole environment support and complement each other to achieve the overall and sustainable socio-economic developments in Ethiopia.

The country needs to invest in forestry (research, extension and education) before the problems get out hands.



LIVESTOCK

CROP

FORESTRY

The country needs to invest PROPORTIONALLY in all agricultural sectors before the problems get out hands.

Let us join hands


FORESTS are a path to SUSTAINABLE development
Thank you !!